

WHAT IS CLAIMED IS:

1. An image forming device comprising:

a photosensitive member on which a latent image is formed;

5 a developing chamber;

a developing member that is housed in the developing chamber and develops the latent image with toner, waste toner that is deteriorated in quality staying in the developing chamber;

10 an accommodating chamber that accommodates toner;

a waste toner accommodating chamber that accommodates waste toner;

a supply auger that supplies toner from the accommodating chamber to the developing chamber;

15 a discharge auger that discharges toner from the developing chamber into the waste toner accommodating chamber; and

a controller that controls the supply auger and the discharge auger, wherein the controller executes a toner replacing process for driving the discharge auger to discharge waste toner from the developing chamber and for subsequently driving the supply auger to supply toner from the accommodating chamber to the developing chamber.

2. The image forming device according to claim 1, wherein  
25 the controller drives the supply auger after the discharge

auger discharges a prescribed amount of waste toner.

3. The image forming device according to claim 1, wherein the controller drives the supply auger after the discharge auger is driven for a predetermined period of time.

5        4. An image forming device according to claim 1, further comprising a deterioration detector that detects deterioration in quality of toner and outputs a detection signal indicative of the deterioration, wherein the controller executes the toner replacing process based on the detection signal.

10       5. The image forming device according to claim 4, wherein the deterioration detector detects the deterioration based on fog of toner produced on the photosensitive member.

6. The image forming device according to claim 4, wherein the deterioration detector detects the deterioration based on  
15 a drive amount in which the developing member is driven.

7. The image forming device according to claim 4, wherein the controller executes an image forming process for a job to print an instructed number of pages, the controller executing the image forming process without executing the developer  
20 replacing process if the deterioration detector has detected the deterioration when number of pages in the job that have yet to undergo the image forming process is less than or equal to a prescribed number of pages.

8. The image forming device according to claim 4, wherein  
25 the controller executes an image forming process for a job to

print an instructed number of pages, the controller executing the image forming process after executing the developer replacing process if the deterioration detector has detected the deterioration prior to performing the image forming process on a first page of the instructed number of pages.

9. The image forming device according to claim 4, wherein the controller executes an image forming process to form full-color images using cyan, yellow and magenta toners, wherein the developing chamber, the accommodating chamber, the supply auger, and the discharge auger are provided separately for each of the cyan, yellow and magenta toners.

10. The image forming device according to claim 9, wherein the controller executes the developer replacing process for each of the cyan, yellow and magenta toners.

11. The image forming device according to claim 9, wherein the controller executes the image forming process to form the full-color images using black toner in addition to cyan, yellow and magenta toners, wherein the developing chamber, the accommodating chamber, the supply auger, and the discharge auger are provided separately for each of the cyan, yellow, magenta and black toners.

12. The image forming device according to claim 9, wherein the controller executes the developer replacing process for each of the cyan, yellow, magenta and black toners.

13. The image forming device according to claim 1,

wherein the accommodating chamber has a larger toner accommodating capacity than the developing chamber.

14. The image forming device according to claim 1, wherein the accommodating chamber and the waste toner  
5 accommodating chamber are formed as a unit, the unit being detachably mounted in the image forming device.

15. The image forming device according to claim 1, further comprising a supply member that is housed in the developing chamber, supplies toner toward the developing  
10 member when the controller executes an image forming process, and supplies toner toward the discharge auger during the toner replacing process.

16. The image forming device according to claim 15, wherein the supply member is disposed substantially to a side  
15 of the discharge auger.

17. The image forming device according to claim 1, further comprising a shutter that is housed in the developing chamber and opens the discharge auger to or closes the discharge auger from the developing chamber.

20 18. The image forming device according to claim 1, wherein toner is positively charged.

19. The image forming device according to claim 1, wherein toner is made from a nonmagnetic single-component material.

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